

103. *Leptostylochus gracilis*, a New Polyclad Turbellarian.

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In the last autumn numerous specimens of a planarian were discovered underneath stones in somewhat brackish water on the shore near the Mitsui Institute of Marine Biology. On examination it was revealed that the planarian in question, though presenting some affinity with such genera as *Neostylochus*, *Idioplana* and *Idioplanoides*, represents a new species referable to *Leptostylochus*, a Stylocid-genus, recorded by Sixten Bock from New Zealand in 1925. In this account a record is given of this species, giving the name of *Leptostylochus gracilis*.

While the animal was living, the body, though very thin and elongate, was of a moderately firm consistency. It was almost uniformly broad for the most part, rounded at the anterior and bluntly pointed at the posterior extremity. The large specimen measured 50 mm. long by 5 mm. broad.

The dorsal surface was uniformly dark ochreous yellow, slightly darker in the pharyngeal region, and wholly destitute of pigment speck. The ventral surface was of a paler colour.

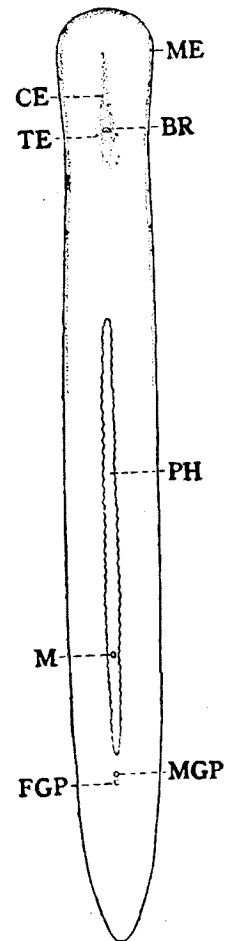
At a distance of about one-eighth the body-length from the anterior end were found a pair of highly reduced tentacles and 5 or 6 tentacular eye-spots mingled with the cerebral eye-spots. The cerebral eye-spots are very numerous and are found arranged in an elongate cluster on each side of the median line. Besides, numerous eye-spots are distributed along the margin of the anterior body-half more closely in the frontal part than elsewhere.

The epidermis is much higher on the ventral than on the dorsal side and contains numerous rhabdite-cells, eosinophilic gland cells and a great quantity of basophilic secretory substance. Of these the third is conveyed from the mucous gland cells embedded in the dorsal parenchyma. The basement membrane is moderately thick, of a close network appearance and pierced by the ducts of the mucous glands.

Here I deem it my duty to express my hearty thanks to Professor T. Kaburaki for his help and advice.

The alimentary system is constructed in the same plan as that in *L. elongatus*. The mouth is located at about the hind end of the middle third of the body and leads into the pharyngeal chamber at its posterior aspect. The pharynx is much longer than half the entire body-length. The main trunk of the intestine is dorsoventrally depressed and numerous subdivided, without showing any trace of anastomosis. The lateral branches form special deep pouches on their ventral side.

The testes occupy a position on the dorsal side rather than on the ventral and are found intermingled with ovaries. The seminal canal filled up with spermatozoa proceeds backwards to near the hind end of the pharynx, pursuing a tortuous course, and passes over on each side into a large ovoid false seminal vesicle which is coated with an inner thin layer of fibrils and an outer thick layer of muscle fibres. The false seminal vesicle is demonstrated in some Stylochids and may be distinguished from the true seminal vesicle by the possession of a highly developed muscular wall and nuclei lying solely among the muscle fibres, as well as by the absence of a zone of nuclei just exterior to the muscular envelop, which is characteristic of the true seminal vesicle. In the present species it is closely allied in feature to that of *Discostylochus*-species rather than *L. elongatus*. This seminal vesicle gives rise posteriorly to a slender muscular duct which soon abruptly turns forwards and inwards to unite with its fellow of the opposite side into the ejaculatory duct. The ejaculatory duct pursues an upward course to enter the penis and finally makes its way to the tip of the latter, after receiving the duct of the prostate gland from the dorsal side. The prostate gland is a pear-shaped organ with the fairly folded direct wall. Its musculature is more developed as compared with that of *L. elongatus*. Among the thick muscle fibres around the prostate duct are found fibrils which form a zone. Numerous efferent ducts of the extracapsular

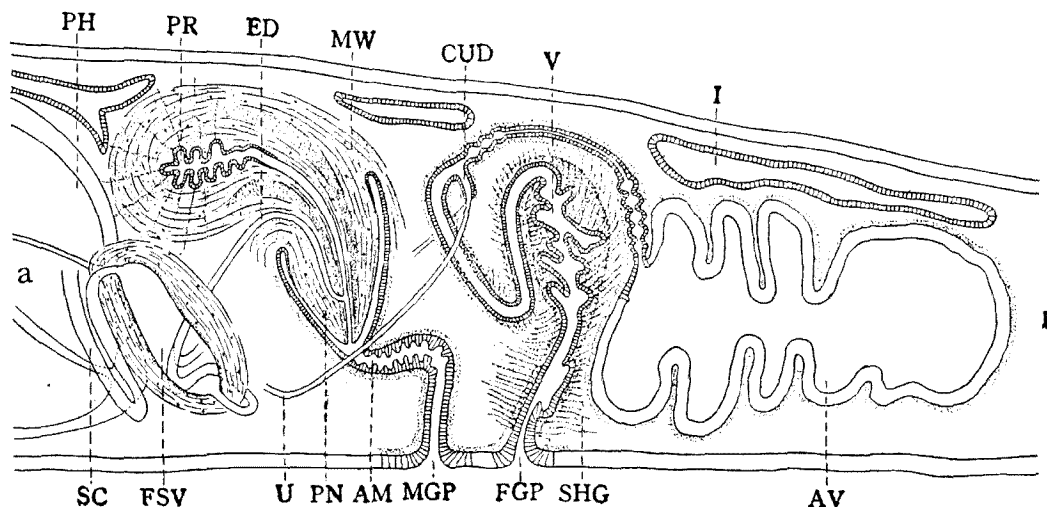


Text-fig. 1.

Leptostylochus gracilis,
sp. nov.

BR brain, CE cerebral eye-spot, FGP female genital pore, M mouth, ME marginal eye-spot, MGP male genital pore, PH pharynx, TE tentacular eye-spot.

prostate glands are also observed to pierce the musculature. The penis is of a small conical shape, devoid of stylet and vertically disposed in the penis-sheath. The penis-sheath passes into the tubular antrum masculinum which proceeds backwards and abruptly bends downwards to open out at about the middle between the mouth and the posterior end of the body. The antrum masculinum is lined at the proximal part with a folded epithelium.



Text-fig. 2. Genital organs of *L. gracilis* in sagittal section.

a anterior, AM antrum masculinum, AV accessory vesicle, CUD common uterine duct, ED ejaculatory duct, FSV false seminal vesicle, I intestine, MW muscular wall, p posterior, PN penis, PR prostate gland, SC seminal canal, SHG shell gland, U uterus, V vagina. Other letters as in Text-fig. 1.

The female genital pore lies immediately behind the male pore and leads upwardly into the fairly wide vagina which is coated with a thick muscular wall. Around the vagina occur well-developed shell-glands. The vagina passes into a narrow canal which bends abruptly downwards for a short distance and then takes an upward course on the side of the penis. After receiving a short uterine duct, the canal proceeds backwards, presenting a bead-like appearance in some parts, and finally passes over into the large accessory vesicle. The accessory vesicle is strongly constricted and has the wall made up of a high glandular epithelium and a fine muscular layer. Occasionally spermatozoa were observed contained in its cavity. The common uterine duct soon divides into two uteri, which run downwards and forwards to near the false seminal vesicle and then gradually upwards to the anterior part of the body.

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